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AUTHOR Larsen-Freeman, Diane E.
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ABSTRACT

Studies were conducted to help determine criteria for describing the stages through which second language learners pass as they acquire a new language. The ability of 24 beginning adult students of English as a second language to supply ten morphemes in obligatory contexts was predicted on the basis of contrastive analysis between English and each student's native language. Out of 13 predictions, nine were confirmed by student performance on the Bilingual Syntax Measure. The same students were retested after two months of intensive English instruction; only six predictions were confirmed by the second test. At the same time, the 24 subjects were also tested for ability to repeat correctly 16 sentences containing the morphemes of the syntax test. The rank order of morphemes from the first administration indicates that morphemes with high perceptual saliency were produced correctly more often than those with low perceptual saliency. After the second administration, the rank order conforms to an order established on the basis of a speaking task. These results indicate that, in determining the nature of universals in language development, researchers must take into account shifts in strategies between beginning and intermediate learning levels. (JB)

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"Evidence of the Need for a Second Language Acquisition Index of Development"

Conference on Second Language Learning and Teaching
Prof. Diane E. Larsen-Freeman, UCLA
July 14, 1976

This paper argues for the need to establish a second language acquisition index of development, a term I have borrowed from Hakuta (1975). Such an index would consist of a description of the stages through which second language learners pass on the way to acquiring any second language. Each stage would be defined by certain speech performance characteristics. While I acknowledge the danger inherent in attempting to divide a process such as language-learning into discrete units such as stages, I believe the risk a necessary one which will enable researchers to explicitly identify the population of learners with whom they are dealing.

Those of us involved in second language acquisition research usually adopt very subjective measures of target language proficiency. We identify learners as being beginning, intermediate or advanced with respect to the target language. Such a classification schema is much too vague to convey to others the level of competence of a particular group of learners. Our colleagues in first language acquisition research enjoy an advantage. They can employ a much more precise measure of the linguistic development of their subjects by calculating their mean length of utterance. Such a measure is obviously not applicable in second language acquisition research where the learner is more cognitively

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sophisticated and, therefore, capable of producing utterances which are more than a few morphemes in length shortly after initial contact with the target language.

While I would be the first to admit that individual learner variability is evident in second language learning, I also am convinced there exist general developmental progressions or trends to which learners conform. Furthermore, I believe the delineation of stages in this progression would allow us to address questions which we are currently forced to ignore.

Hakuta (1975), for example, conducted a longitudinal study of the acquisition of English by Uguisu, a five-year old native Japanese speaker. One of the issues he chose to examine was language transfer as a factor in the second language learning process. He was specifically interested in the structural avoidence phenomenom observed by Schachter (1975).

In order to study this, he decided to compare Uguisu's use of relative clauses with that of Marta, a five-year old Spanish-speaker learning ESL who was then a subject of a study by Cancino, Rosansky and Schumann. He hypothesized that since Spanish like English, and unlike Japanese, places the head noun to the left of the relative clause, Marta would produce more relative clauses than Uguisu.

He was hampered in this analysis, however, since he had no reliable means of determining whether Uguisu and Marta were at a similar stage of development in English. Had he been comparing the number of relative clauses used by two

children learning English as their first language, he could have been reasonably safe in assuming that they were at a similar stage of development since they were both five-year olds. Unfortunately, we in second language acquisition research cannot even rely upon the independent yardstick of chronological age by which to compare subjects.

I believe the behavior of the learner and influences on the learning process change as the learner's proficiency in target language increases; therefore, when making any claims about the learner, researchers must specify at which stage of development their subjects are functioning. We tend to get embroiled in controversies because we overlook this. We argue about the influence of a certain factor on the language learning process while overlooking the probability that the influence of any given factor might vary depending upon the level of the learner with respect to the target language.

For example, to what extent first language transfer occurs in the process of acquiring a second language has been a hotly debated issue in the second language acquisition field for some time. However, if one accepts Newmark's (1966) view of language transfer---that the L_1 is not a source of proactive inhibition, but rather something the learner relies on less and less as he becomes increasingly proficient at expressing himself in the target language---one realizes that conflicting views about the effect of L_1 transfer could result simply because these views were based on the performance of learners at different stages of development.

I conducted a study in which the linguistic performance

of twenty-four "beginning" adult learners of ESL was analyzed with respect to ten grammatical morphemes. Among the twenty-four subjects there were six Arabic speakers, six Japanese speakers, six Persian speakers and six Spanish speakers. I performed a cursory contrastive analysis between English and each of these four different native language backgrounds for these ten grammatical morphemes. On the basis of this limited contrastive analysis, I made a number of predictions about which morphemes would cause the most difficulty for which language groups.

I administered the Bilingual Syntax Measure (Burt, Dulay and Hernandez, 1973) to my subjects and scored for whether or not they supplied the ten morphemes in obligatory contexts. The score for any given morpheme was dependent upon the percentage of times the morpheme was supplied accurately in obligatory contexts.

The decision to reject or accept each hypothesis was predicated upon the relative performance of the language group involved in the prediction as compared with the performance of the other language groups on that particular morpheme. Thus, for example, if I predicted that the Japanese subjects would have trouble with morpheme X and the other groups would have no undue difficulty with morpheme X, I decided my hypothesis was confirmed if the Japanese group scored substantially lower on morpheme X than each of the other three groups. This was not a rigorously-controlled study by any means, but I feel it gave me a rough idea of the effect of the L_1 on the subjects' performance in English.

I arrived at thirteen predictions,[1] and as you can see from Tables 1 and 2, I felt that nine of my predictions were confirmed, three were disconfirmed and the status of one had to remain undetermined due to the insufficient number of obligatory contexts by which to score the particular morpheme.

(Put Tables 1 & 2 about here.)

After two months during which the subjects underwent intensive English instruction, I repeated the entire procedure. As you can see from Tables 3 and 4, this time I was able to confirm only six of my predictions, while five were disconfirmed and two were undetermined.

(Put Tables 3 & 4 about here.)

While I recognize that the effect of language transfer can be measured in many ways such as the rate of acquisition, structural avoidance, interference errors, etc., I believe this initial analysis does provide some evidence that the effect of the native language on the English performance of ESL students was reduced somewhat over time. Thus, any claim about the influence of native language transfer on the L_2 acquisition process must be specified for the proficiency level of the learners being studied.

Taylor (1975), too, has contributed support for the notion that the character of the learner's linguistic performance changes depending upon the degree to which the target language has been acquired. He administered a translation test to twenty Spanish-speaking subjects of ESL.

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[1]See Larsen (1975) for a discussion of their content.

The subjects were at two levels of proficiency - "beginning" and "intermediate". The test required the subjects to translate eighty Spanish sentences into English. "A taxonomy of twenty error types was designed to analyze the errors in the AUX and the VP of the translations. The error types were then categorized into errors of overgeneralization, transfer, translation, indeterminate origin and errors not considered."

(Put Table 5 about here.)

From Table 5, we can see that the errors made by the elementary and intermediate level students were not qualitatively different. "However, the subjects' reliance on the strategies of overgeneralization and transfer were found to be quantitatively different. The elementary subjects' reliance on the transfer strategy was found to be significantly higher than that of the elementary subjects." In this study, then, the difference between learner proficiency levels was manifested by a shift in the dominant strategy. As the learner improved in the target language, the more he exhibited intra-language, as opposed to inter-language, errors.

We find further evidence of a qualitative difference in the performance of subjects at different levels of proficiency by considering the demands that an elicited imitation task makes on learners.

Fraser, Bellugi and Brown (1963), first language acquisition researchers, found that the children in their study imitated a sentence with greater facility than they could comprehend or produce it. They suggested that this was because imitation was nothing more than the exercise of a motor skill. Naiman

(1974), a second language acquisition researcher, challenged this suggestion after he found that his subjects performed better on a comprehension task than on imitation task. He proposed that imitating demanded much more than the exercise of a simple motor skill involving instead some sort of cognitive processing of the sentence by the subjects in order for them to be able to reproduce it. Thus, a subject's performance on an elicited imitation task reflected the subject's competence in the target language and was not just a task the subject could perform by rote.

Many other researchers have contributed evidence one way or the other (Lovell and Dixson, 1967; Slobin and Welsh, 1967; Turner and Rommeveit, 1967; Keeney, 1969; Keeney and Smith, 1971; Nurss and Day, 1971; Fernald, 1972.) While I realize that whether or not the learner's language-processing abilities are being tapped in an elicited imitation task might depend on the length of the sentence to be imitated, or other variables, I nevertheless was interested in seeing if imitating task demands on my twenty-four subjects changed over time.

Sixteen sentences were constructed containing ninety-one total occurrences of the same ten morphemes I examined earlier. The sentences were all approximately fifteen syllables long and the position of each morpheme was arranged so that each allomorph appeared at least once in the beginning of a sentence, medially and finally. The experimenter read each sentence once and the subject was asked to repeat each immediately.

Once again the results were scored by determining the percentage of times a subject supplied each morpheme in its

obligatory contexts. The scores on each morpheme were summed for all subjects and the morphemes were ranked according to decreasing percentage. This entire treatment was repeated after the same two-month interval during which the subjects received intensive instruction in English.

(Put Table 6 about here.)

It is very interesting to compare the rank order of morphemes from the first administration of the imitation task with that of the second. From Table 6, we can see that after the first administration of the task, the copula is the only morpheme out of alignment with the natural division which would take place if the other nine morphemes were to be split into two groups - one having perceptual saliency ([+ syllable]) and occupying the upper portion of the rank order (prog, art, i. past and 1. plu) and the other group having low perceptual saliency (all bound morphemes; all [- syllable]), sharing phonological forms, and occupying the bottom portion of the rank order (3rd sing, s. plu, aux and poss). The regular past morpheme has both salient (/id/) and non-salient, (/t/, /d/) allomorphs, and hence should, and does, occupy the medial position in the order.

The rank orders of the morphemes from the second administration of the task no longer conform to this pattern. Instead, the second rank order correlates very highly with the rank order determined from a speaking task using the same morphemes. ($r_s = .7455 < .01$) Since we can safely assume that in order to produce these same morphemes in free speech the subjects had to somehow engage their language processing mechanism,

it is possible that an interpretation of the data from the first test would support the notion that imitation is a motor skill and that the subjects were rotely repeating sounds, while the data from the second test would indicate that something more cognitively demanding is being tapped.

Again, we see that the two positions by researchers could both be plausible - the difference in their two views could be accounted for due to the difference in proficiency levels of their subjects with respect to the target language.

If I have convinced you that we indeed need an independent index of development by which to measure and report the language proficiency of subject populations, what could be the basis for such an index?

It seems to me we would need to look for something more global than the performance of learners on any given structure or number of structures since it would be difficult to choose structures which were representative of overall competence in the English language and not biased against any particular language group. Then, too, if we really want this to be a second language acquisition index of development, and not simply an ESL index, we would have to look for some way of measuring second language proficiency in a non-language specific way.

Gillis (1975) has suggested using scores on the Peabody Picture Vocabulary Test as a basis for determining stages in second language acquisition. This might work well for ESL although it probably would not be possible to posit the same stages for both child and adult learners.

In any event, a syntactic measure would probably also be necessary to accurately guage the level of target language proficiency of any learner or group of learners. Dulay and Burt (1974) offer the Syntax Acquisition Index as a possible discriminating device in this regard.

The length or number of T-units (Hunt, 1965) subjects produce might be useful in establishing different stages of development, although Godfrey (1976) did not find a significant difference in their usage among the learners of different proficiencies in his study. Scott and Tucker (1974), however, did note a significant increase in the oral and written production of error-free T-units by their subjects over time.

Krashen (1976) in discussing his monitor theory, has recently posited three stages of development on the basis of a survey he conducted of the error analysis literature.

I won't go into the details of his three stages (perhaps he will do that tomorrow) but the criteria he uses to distinguish between the three stages do indeed deserve serious consideration in our quest for an independent index of development.

In his stage one, for example, "utterances are initiated by the L_1 surface order, without any redundant elements such as grammatical morphemes or movement transformations." This stage is thus characterized by the utilization of L_2 content words using the "kernel" or untransformed word order of the L_1.

While this is very appealing, there are certain limitations to Krashen's analysis. First, by his own admission, the data base for the stages is uncomfortably small. Secondly, part

of the description of each stage is devoted to explicating the influence Krashen's monitor theory has on the learner's performance. While the distinction he makes between learning and acquisition is certainly an intriging one, since it has yet to be substantiated by any research project designed expressly for that purpose, I would prefer to see stages constructed without involving the monitor model at this point in time. Thirdly, Krashen integrates affective variables into each of his stages. For example, he says that the stage I learner's performance results from the speaker being at a considerable social distance from the target language. I would prefer to see the stages defined in purely linguistic performance terms, relying upon the affective variables for explanations as to why or why not the learner fossilizes at a particular stage or exhibits any aberrations from the normal progression.

Finally, I am hopeful that it is possible to achieve greater discrimination among learner proficiencies then simply relegating any given learner to one of three stages--particularly since Krashen notes most second language learners would fall between stages two and three. The more narrowly we can define a learner's proficiency, the more precisely we can delineate the language-learning process and the more discriminately we can convey to other researchers who the subjects of our studies are.

None of these criticisms are meant to undermine Krashen's contributions. I feel he has given us a good start. From this beginning, we can hopefully go on to test, expand upon

and delete from the stages he has posited till we have indeed constructed an index of second language development by which we can all adhere.

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TABLE 1

LANGUAGE GROUP PERFORMANCE ON BSM AT TIME ONE

Morphemes	Arabic			Japanese			Persian			Spanish		
	S[a]	P[b]	%[c]	S	P	%	S	P	%	S	P	%
aux	48	92	52	40	54	74	44	60	73	38	46	83
3rd sing	16	36	44	18	36	50	12	42	28.5	16	48	33
poss	4	32	12.5	12	26	46	6	30	20	6	30	20
cop	50	60	83	38	44	86	47	58	81	42	54	77
s. plu	58	88	66	32	64	50	42	84	50	58	80	73
art	202	228	88.5	106	158	67	138	216	64	177	192	92

[a]raw score

[b]potential score

[c]percentage of suppliance in obligatory contexts.

TABLE 2

THE STATUS OF THE CONTRASTIVE ANALYSIS PREDICTIONS AFTER AN EXAMINATION OF THE DATA AT TIME I

Language Group	Morpheme	Confirmed	Disconfirmed
Arabic	aux	x	
	3rd sing		x
	poss	x	
	cop		x
Japanese	s.plu	x	
	3rd sing		x
	art	x	
Persian	s.plu	x	
	poss	x	
	art	x	
Spanish	poss	x	
	cop (certain instances)	x	
	art (certain instances)	?	?

TABLE 3

LANGUAGE GROUP PERFORMANCE ON BSM AT TIME TWO

Morphemes	Arabic			Japanese			Persian			Spanish		
	S[a]	pb	%[c]	S	P	%	S	P	%	S	P	%
aux	62	88	70.5	50	58	86	73	74	99	66	74	89
3rd sing	12	40	30	10	36	28	27	48	56	13	40	32.5
poss	8	24	33	16	22	73	27	44	61	30	44	68
cop	45	64	70	34	36	94.5	75	80	94	45	52	86.5
s.plu	58	80	72.5	37	66	56	52	68	76	70	84	83
art	206	244	84	86	158	54	139	228	61	219	226	97

[a]raw score

[b]potential score

[c]percentage of suppliance in obligatory contexts

TABLE 4

THE STATUS OF THE CONTRASTIVE ANALYSIS PREDICTIONS AFTER AN EXAMINATION OF THE DATA AT TIME TWO

Language Group	Morpheme	Confirmed	Disconfirmed
Arabic	aux	x	
	3rd sing		x
	poss	x	
	cop	x	
Japanese	s.plu	x	
	3rd sing		x
	art	x	
Persian	s.plu		x
	poss		x
	art	x	
Spanish	poss		x
	cop (certain times)	?	?
	art (certain times)	?	?

TABLE 5•

OVERGENERALIZATION AND TRANSFER

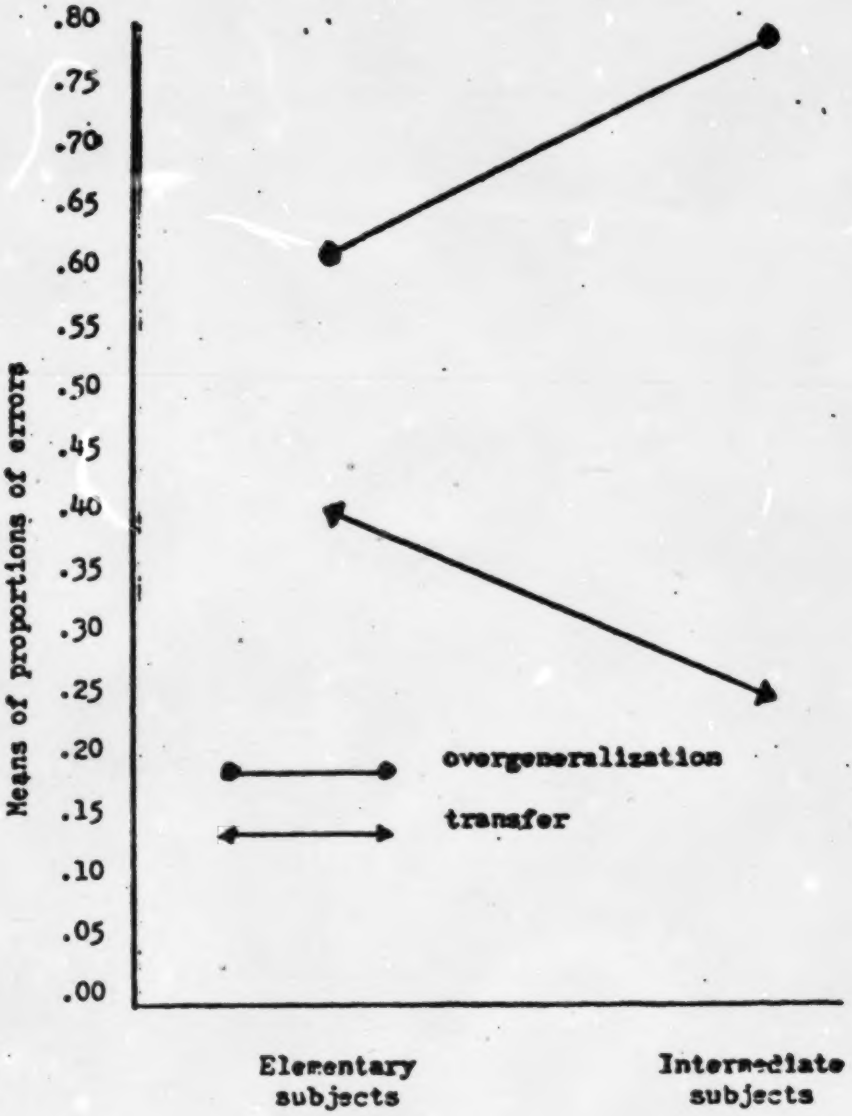

Figure 1. The means of the proportions of overgeneralization and transfer errors made by the elementary and intermediate subjects.

• Reproduced from article by Taylor in Language Learning, 25, 1975.

TABLE 6

RANK ORDERS OF MORPHEMES ON IMITATING TASK AT TWO TIMES

IMITATING TASK - TIME ONE	IMITATING TASK - TIME TWO
1. prog	1. cop
2. art	2. prog
3. cop	3. art
4. i.past	4. aux
5. l.plu	5. i.past
6. r.past	6. l.plu
7. 3rd sing	7. 3rd sing
8. s.plu	8. s.plu
9. aux	9. r.past
10. poss	10. poss

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